

**BRAUN**

**IRT 3020**

**IRT 3520**



**ThermoScan®**

**Type 6012**

**Type 6013**

**Internet:**

[www.braun.com](http://www.braun.com)

Manufactured by:

Braun GmbH

Frankfurter Str. 145

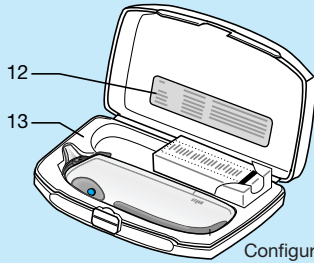
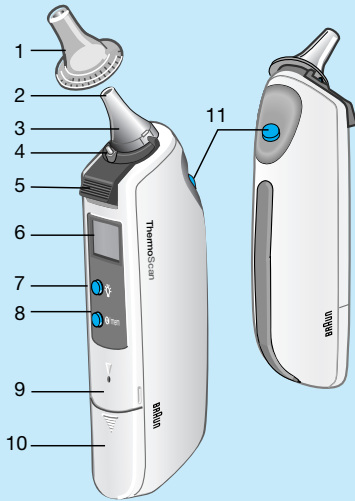
61476 Kronberg / Germany

6-012-136/00/X-05

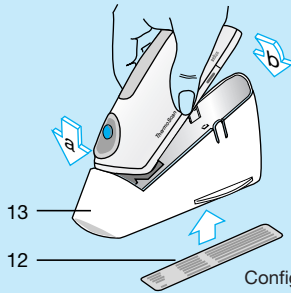
USA

Printed in Germany

## IRT 3520

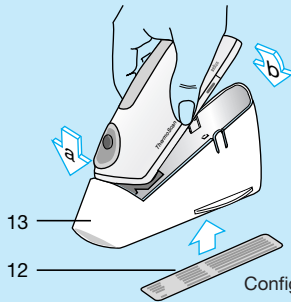
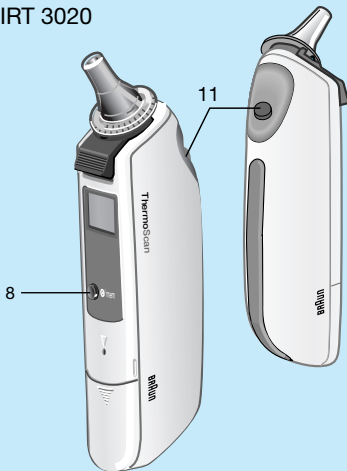


Configuration A

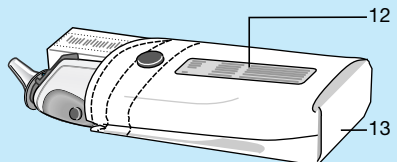


Configuration B

## IRT 3020



Configuration A



Configuration B

## English

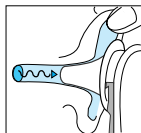
The Braun ThermoScan thermometer has been carefully developed for accurate, safe and fast human body temperature measurements in the ear. The shape of the thermometer prevents it from being inserted too far into the ear canal to damage the eardrum.

**However, as with any thermometer, proper technique is critical to obtaining accurate temperatures. Therefore, please read all instructions carefully and thoroughly before using this product and keep the manual handy for future reference.**

## Important

- The operating ambient temperature range for this thermometer is 50 °F to 104 °F (10 °C to 40 °C).
- Do not expose the thermometer to temperature extremes below - 4 °F or over 122 °F (- 20 / 50 °C) or excessive humidity (> 95 % RH non-condensing).
- This thermometer must only be used with genuine Braun ThermoScan Lens Filters (LF 40). Never use this thermometer without a new, clean lens filter attached.
- If the thermometer is ever accidentally used without a lens filter attached, clean the lens (see «Care and cleaning»).
- Always store thermometer in travel case, protective cover or plastic case.
- Basic safety precautions should always be observed, especially when using the thermometer on or near children and disabled persons.
- Keep lens filters out of reach of children.
- **This thermometer is intended for home use only.**
- **Use of this thermometer is not intended as a substitute for consultation with your physician.**
- **Do not leave thermometer or lens filters with infants or children at any time.**

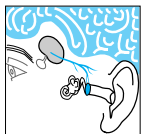
## How does Braun ThermoScan work?



The Braun ThermoScan thermometer measures the infrared heat generated by the eardrum and surrounding tissue. To help ensure accuracy, the thermometer «scans» by taking 8 measurements in just one second and displaying the highest temperature.

The displayed ThermoScan temperature is the actual measured ear canal temperature plus a mathematical adjustment to approximate the familiar oral range. However, this is not necessarily the same as an oral temperature measured at the same time.

## Why measure in the ear?



The goal of thermometry is to measure core body temperature, which is the temperature of the vital organs. Clinical studies have shown that the ear is an excellent site to measure body temperature, since ear temperatures reflect core body temperature. The eardrum shares blood supply with the temperature control center in the brain, the **hypothalamus**, allowing changes in body temperature to be reflected sooner in the ear than at other sites.

- Axillary temperatures reflect skin temperature which may not indicate core body temperature.
- Oral temperatures are influenced by drinking, eating and breathing through the mouth.
- Rectal temperatures often lag behind changes in core body temperature and there is a risk of cross-contamination.

## Body temperature

Normal body temperature is a range. The following table<sup>1</sup> shows that ranges of normal also vary by site. Therefore, readings from different sites, even if taken at the same time, should not be directly compared.

Axillary:	94.5 °F - 99.1 °F	34.7 °C - 37.3 °C
Oral:	95.9 °F - 99.5 °F	35.5 °C - 37.5 °C
Rectal:	97.9 °F - 100.4 °F	36.6 °C - 38.0 °C
ThermoScan <sup>2</sup> :	96.4 °F - 100.4 °F	35.8 °C - 38.0 °C

- Also, a person's normal temperature range tends to decrease with age. The following table shows normal ThermoScan ranges by age.

### Normal ThermoScan temperature ranges<sup>2</sup>



0 - 2 years	97.5 °F - 100.4 °F	36.4°C - 38.0 °C
3 - 10 years	97.0 °F - 100.0 °F	36.1°C - 37.8 °C
11 - 65 years	96.6 °F - 99.7 °F	35.9°C - 37.6 °C
> 65 years	96.4 °F - 99.5 °F	35.8°C - 37.5 °C

- However, the range of normal also varies from person to person and fluctuates throughout the day. It is therefore important to determine your and your family members' normal temperature ranges. This is easily done using Braun ThermoScan. Practice taking temperatures on yourself and healthy family members to determine their normal temperature ranges.

Note: When consulting your physician, communicate that the ThermoScan temperature is a temperature measured in the ear and if possible, note the individual's normal ThermoScan temperature range as additional reference.

1. Chamberlain, J.M., Terndrup, T.E., New Light on Ear Thermometer Readings, Contemporary Pediatrics, March 1994.  
 2. Chamberlain, J.M., et al., Determination of Normal Ear Temperature with an Infrared Emission Detection Thermometer, Annals of Emergency Medicine, January 1995.

## Product description

1. Lens filter
2. Probe tip
3. Probe
4. Lens filter detector
5. Lens filter ejector
6. Display (LCD)
7. LCD light button  (IRT 3520 only)
8. /mem button (On/memory function)
9. Battery door lock
10. Battery door
11. Activation button
12. Label
13. Travel case/protective cover/storage pouch (depending on configuration)

## Package components

- Braun ThermoScan thermometer
- Use and Care manual
- Quick Reference Guide
- Lens filters (20, plus one on the thermometer)
- Owner registration/warranty card
- Additional items may be included as noted on outer packaging
- Label

The first time you use the thermometer, please make sure to apply the special label included in the package, in the language of your choice (Item 12 on page 3).

## How to use Braun ThermoScan

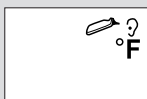
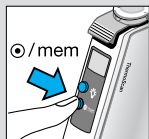
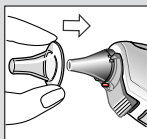
1. **Always make sure a new, clean lens filter is in place to help ensure an accurate reading.**

The thermometer will not function without a lens filter attached (see Changing the lens filter).

2. Press the /mem button.

The LCD (liquid crystal display) is activated, showing all segments.

When the ready symbol  is displayed the thermometer is ready for use.



To help ensure an accurate temperature reading, use the following technique: If you are right handed, hold the thermometer in the right hand and take the temperature in the right ear. If you are left handed, hold it in the left hand and use the left ear.

3. Perform an ear tug to straighten the ear canal. This gives the thermometer a clear view of the eardrum.

Children under 1 year:

Pull the ear straight back.

Children aged 1 year to adult:


Pull the ear up and back.

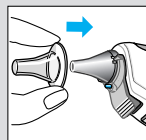
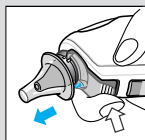
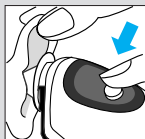
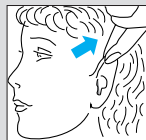
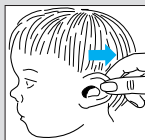
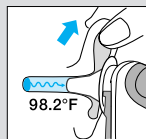
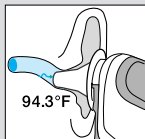
An ear tug is best performed by using your free hand to grasp the outer edge of the top half of the ear. To take your own temperature, wrap your free hand around the back of your head and grab your ear from behind.

4. While tugging the ear, fit the probe snugly into the ear canal as far as possible and press the activation button. Release it when you hear a beep. This is the Temp Beep that confirms the end of measurement.

5. Remove the thermometer from the ear canal. The LCD displays the temperature measured.

6. **Replace the lens filter after each measurement: press the ejector button and put on a new, clean lens filter.**

7. A new measurement can be taken as long as the ready symbol  is shown. If no button is pressed within 2 minutes, the thermometer will turn off automatically.



Note: In the following situations, it is recommended that you take three temperatures in the same ear. If they differ, use the highest reading.

- Infants in the first 90 days of life.
- Children under three years of age who have a condition such as a compromised immune system and for whom the presence or absence of fever is critical.
- When you are first learning to use the ear thermometer until you are comfortable with the technique and are obtaining consistent readings.

Important: As with any type of thermometer, slight temperature variations ( $\pm 0.3 - 0.5$  °F /  $\pm 0.2 - 0.3$  °C) can occur, if consecutive measurements are taken.


## Temperature taking hints


- The right ear reading may differ from the reading taken at the left ear. Therefore, always take the temperature in the same ear.
- The ear must be free from obstructions or excess earwax build-up to take an accurate reading.
- External factors may influence ear temperatures, including when an individual has:
  - been lying on one ear or the other
  - had their ears covered
  - been exposed to very hot or very cold temperatures, or
  - been recently swimming or bathing.

In these cases, remove the individual from the situation and wait 20 minutes prior to taking a temperature.




## Memory mode

The last temperature taken before the thermometer powers down is stored in memory. To enter the memory mode, press the /mem button.



Even in memory mode, a new temperature can be taken provided that the ready symbol is  shown.


### IRT 3020

The last stored temperature is displayed along with the MEM symbol. To quit the memory mode, press the /mem button again.


### IRT 3520

This model allows you to store up to 8 temperatures.




When pressing the  /mem button, the display shows the memory cell number (e.g. MEM 1). When releasing the  button, the stored temperature is displayed.

Each time the /mem button is pressed, a new memory cell is displayed (up to MEM 8).

An empty memory cell shows «- - - °F». Only the first empty memory cell will be displayed.

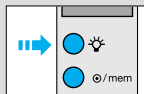
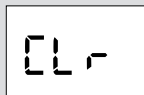
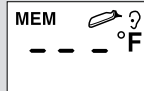
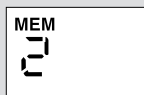
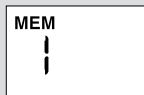
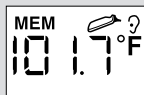
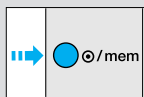
To quit the memory mode, press the /mem button again after reaching MEM 8 or «- - - °F».

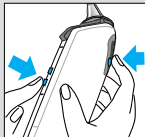
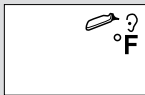
### Memory clear

Press the /mem button for 5 seconds to clear the temperatures stored in memory. Release the  button to return to the ready symbol .

### LCD light (model IRT 3520 only)

For easy nighttime reading.





IRT 3020

MEM

IRT 3520




MEM



°C

## Changing the temperature scale

This thermometer is shipped with the Fahrenheit temperature scale activated. If you wish to switch to Celsius (°C), proceed as follows:

- Turn on the thermometer.  
(If it is already turned on, make sure it is not in memory mode.)
- Press the /mem button and keep it pressed. Then press and release the activation button to switch over to the «change temperature scale» mode.
- By pressing the activation button again, the Celsius scale is activated, «°C» is displayed on the LCD. Each further pressing of the activation button toggles the scale between °C and °F.
- Release the /mem button to return to the ready symbol .

All temperatures stored in memory will automatically be converted to the selected scale when displayed on the LCD.

## Changing the lens filter

The thermometer is supplied with a lens filter in place. To assure accuracy and sanitary practice, Braun recommends replacing the lens filter after each use. To install a new lens filter, first remove the one in place by pressing the lens filter ejector. Check the lens for any damage. Then take a new lens filter from the box, and holding it by its edges, slide it onto the probe until it snaps in place.

**Caution: Do not touch the tip of the probe or lens filters when installing. Fingerprints, ear wax, dust and other soiling compounds reduce the transparency, resulting in lower temperature readings (see also Care and cleaning).**

Should you run out of lens filters and need to take a temperature, you may use the following lens filter cleaning procedure:

- Clean the lens filter without removing it from the thermometer with a soft cloth or cotton swab moistened with alcohol.  
Do not use hot or boiling water.
- Dry completely with a soft cloth before reusing.
- Replace lens filter as soon as possible with a new one (LF 40).
- Additional lens filters (LF 40) are available at most stores

carrying Braun ThermoScan thermometers or at Braun Service Centers.

- If you have accidentally placed the thermometer in your ear without a lens filter in place, be sure and clean the probe (see «Care and cleaning» and then apply a clean lens filter.

## Care and cleaning

The probe tip is the most delicate part of the thermometer. It has to be clean and intact to ensure accurate readings.

If the thermometer is ever accidentally used without a lens filter, clean the lens as follows:


- Hold the appliance with the probe tip facing down to prevent liquid from entering the probe tip area. Very gently wipe the surface with a cotton swab or soft cloth moistened with alcohol.
- After cleaning, allow at least 45 minutes drying time before reattaching a new, clean lens filter and taking a temperature. If the probe tip is damaged, contact Braun.

Use a soft, dry cloth to clean the thermometer display and exterior. Do not use abrasive cleaners. Never submerge the thermometer in water or any other liquid.

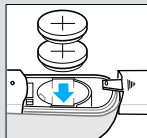
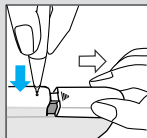
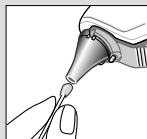
Store thermometer and lens filters in a dry location free from dust and contamination and away from direct sunlight. The ambient temperature at the storage location should remain fairly constant and within the range of 50 °F to 104 °F (10 °C - 40 °C).

**Always keep cleaning solutions and rubbing alcohol away from children.**




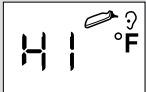




## Replacing the batteries

The thermometer is supplied with two 3 V lithium batteries (CR 2032/DL 2032). Insert new batteries when the battery symbol  appears on the display.

Using the tip of a ball-point pen, press the battery door lock to open the battery compartment. Remove the batteries and replace with new batteries, making sure the poles are in the right direction. Slide battery door back in until it snaps in place.



## Troubleshooting

Error message	Situation	Solution
	No lens filter is attached.	Attach new, clean lens filter
	No lens filter is attached and activation button was pressed while probe was in the ear.	Make sure probe tip is clean; refer to section «Care and cleaning» if necessary. Attach new, clean lens filter to stop error beeps.
	Ambient temperature is not within the allowed operating range 50 °F to 104 °F (10 °C - 40 °C) or changing too rapidly.	Allow the thermometer to remain in a room for 30 minutes where the temperature is between 50 °F to 104 °F (10 °C - 40 °C)
	Temperature taken is not within typical human temperature range (93.2 °F - 108 °F / 34 °C - 42.2 °C).	Make sure new, clean lens filter is attached and thermometer is properly inserted. Then, take a new temperature.
	HI = too high LO = too low	
	Battery is low, but thermometer will still operate correctly. (No light function on IRT 3020 models.)	Insert new batteries
	Battery is too low to take correct temperature readings.	Insert new batteries
	System error <ul style="list-style-type: none"> <li>• If error persists</li> <li>• If error still persists</li> </ul>	Wait 2 minutes until thermometer powers down, then turn on again. ... reset the thermometer by removing the batteries and putting them back in. ... call Braun ThermoScan Customer Service at 1- 800 - 327-7226.

## Special situations

The Braun ThermoScan thermometer has been shown in clinical studies to obtain accurate temperatures on persons of all ages. However, there are certain situations when the ear thermometer should not be used. These include but may not be limited to the following situations.

- If there is blood or drainage in the external ear canal.
- For persons who have deformities of the face and ear canal where the probe of the thermometer cannot be inserted fully into the ear canal.
- For persons wearing hearing aids or ear plugs, remove the device and wait 20 minutes prior to taking a temperature.
- Use the untreated ear if prescription ear drops or other ear medications have been placed in the ear canal.

Never attempt to clean inside ears. You could damage the ear drum or surrounding tissues. You should remove excess ear wax only when you can reach it with a wash cloth. If you suspect that you or your child has excess ear wax, consult your physician.

## Fever facts

Many persons may not have an elevated temperature even when they are ill. These include, but are not limited to infants under 90 days of age, persons taking steroids, antibiotics or antipyretics (acetaminophen, ibuprofen, aspirin), persons with compromised immune systems, including the elderly or persons with some chronic illnesses. Consult your physician if you feel an illness is present even if there may not be an elevated temperature.

Fever is described as an elevation of body temperature over an individual's «normal» temperature.

An elevated temperature or fever is often viewed as a danger sign. In fact, a fever can be very beneficial, and helps our immune system work more effectively. A fever should be evaluated in the light of other physical symptoms. With the exception of newborn infants, the presence of fever, without any other symptoms of illness, or in a child who is behaving normally may not be cause for concern. On the other hand, a physician should be consulted in the following situations:

- vomiting
- diarrhea
- changes in appetite, activity or breathing, or
- with children who are irritable, lethargic or unusually sleepy.

Some people, like the elderly, infants under 90 days of age, those with compromised immune systems, or persons who take steroids, for example are often unable to build a response to illness or environmental conditions. These individuals may not have a fever when they are ill, or their elevated temperature may be lower than expected for the severity of their illness. Other medications such as anti-inflammatories and some analgesics may also mask fever.

The presence or absence of fever should rarely be used as the only measurement of the significance of illness. Your physician should be contacted whenever there is a question about your family's health.

Antipyretics, like acetaminophen or ibuprofen, are usually recommended to relieve the aches and associated symptoms of fever, not the fever itself. Febrile seizures, or convulsions, which usually occur in children six months to six years of age, are thought to occur not because a fever is present, but because of the rate of rise of the child's temperature. Call your physician if your child has a febrile seizure or you desire further information.

**Use of the Braun ThermoScan thermometer is not intended as a substitute for consultation with your physician.**

## Product specifications

Displayed temperature range	93.2 °F -108 °F (34 °C - 42.2 °C)
Operating ambient temperature range	50 °F -104 °F (10 °C - 40 °C)
Display resolution	0.1 °F or °C

### Accuracy for patient temperature range

	<u>Maximum Laboratory Error</u>	
96.8 °F -102.2 °F (36 °C - 39 °C):	± 0.4 °F	± 0.2 °C
outside this range:	± 0.5 °F	± 0.3 °C

### Long term storage ranges

Temperature:	- 4 °F to 122 °F (- 20 °C to 50 °C)
Humidity:	95 % non-condensing
Battery life:	2 years / 1000 measurements

This infrared thermometer meets requirements established in ASTM Standard E 1965-98 (for the thermometer system [thermometer with lens filter]). Full responsibility for the conformance of the product to the standard is assumed by Braun GmbH, 61476 Kronberg, Germany.

ASTM laboratory accuracy requirements for the thermometer only (not including a lens filter) in the display range of 98.8 °F to 102.2 °F (36 °C to 39 °C) for infrared thermometers is ± 0.4 °F (± 0.2 °C), whereas for mercury-in-glass and electronic thermometers, the requirement per ASTM Standards E 667-86 and E 1112-86 is ± 0.2 °F (± 0.1 °C).

This appliance conforms to the following standards:

- DIN EN 60601-1: 3/96 «Medical electrical equipment» –  
Part 1: General requirements for safety
- DIN EN 12470-5: 2003 «Clinical thermometers» –  
Part 5: Performance of infrared ear thermometers  
(with maximum device)



TYPE BF  
EQUIPMENT



Attention, consult  
ACCOMPANYING  
DOCUMENTS



MEDICAL ELECTRICAL EQUIPMENT  
CLASSIFIED BY UNDERWRITERS LABORATORIES INC.®  
WITH RESPECT TO ELECTRIC SHOCK, FIRE AND  
MECHANICAL HAZARDS ONLY  
IN ACCORDANCE WITH UL 2601-1 / CAN CSA C22.2  
No.601.1 10HK

Internally Powered Equipment  
Continuous Operation  
Not Protected against Ingress of Water  
U.S. Patent No. 5,088,834 Other Patents Pending

MEDICAL ELECTRICAL EQUIPMENT needs special precautions regarding EMC. For detailed description of EMC requirements please contact the Braun ThermoScan Customer Service at 1-800-327-7226.  
Portable and mobile RF communications equipment can affect MEDICAL ELECTRICAL EQUIPMENT.

In the unlikely event you experience any difficulty using the Braun ThermoScan thermometer, simply call us toll free at 1-800-327-7226.

## Service

The Braun ThermoScan thermometer has a limited three year warranty. Should service be required during or after the warranty period, you must call Braun ThermoScan's Customer Service Department at 1-800-327-7226 to obtain a return authorization number and shipping address. Repackage the thermometer carefully in its original packaging or securely packed to avoid damage during shipping. Include the original sales slip indicating the date of purchase, a note describing the problem, your authorization number, and your return address. Send the Braun ThermoScan thermometer prepaid and insured.

**Note:** Shipping address varies by country.

Answers to any question regarding operation of the Braun ThermoScan thermometer may be obtained by calling us toll free at:  
1-800-327-7226  
Monday-Friday  
6:30 AM to 5:00 PM Pacific Time

## Limited three year warranty

Braun warrants this product against any defects that are due to faulty material or workmanship for a period of three years from the original date of consumer purchase or receipt as a gift. This warranty applies when used for normal household use in accordance with the Use and Care Manual and excludes the battery and damage to the product resulting from accident or misuse. This product is not warranted when used in a professional environment.

In no event shall Braun be liable for any special, incidental, indirect or consequential damages in connection with the purchase or use of this product or costs over the original cost of the product.

If the product should become defective within the warranty period, contact Braun ThermoScan's Customer Support Department at 1-800-327-7226 for repair or replacement at no charge. Braun reserves the right to replace a defective product with the most comparable product currently available. This product has a five year minimum expected lifetime.

While this warranty gives you specific legal rights, you may also have other rights which vary from state to state/province to province.